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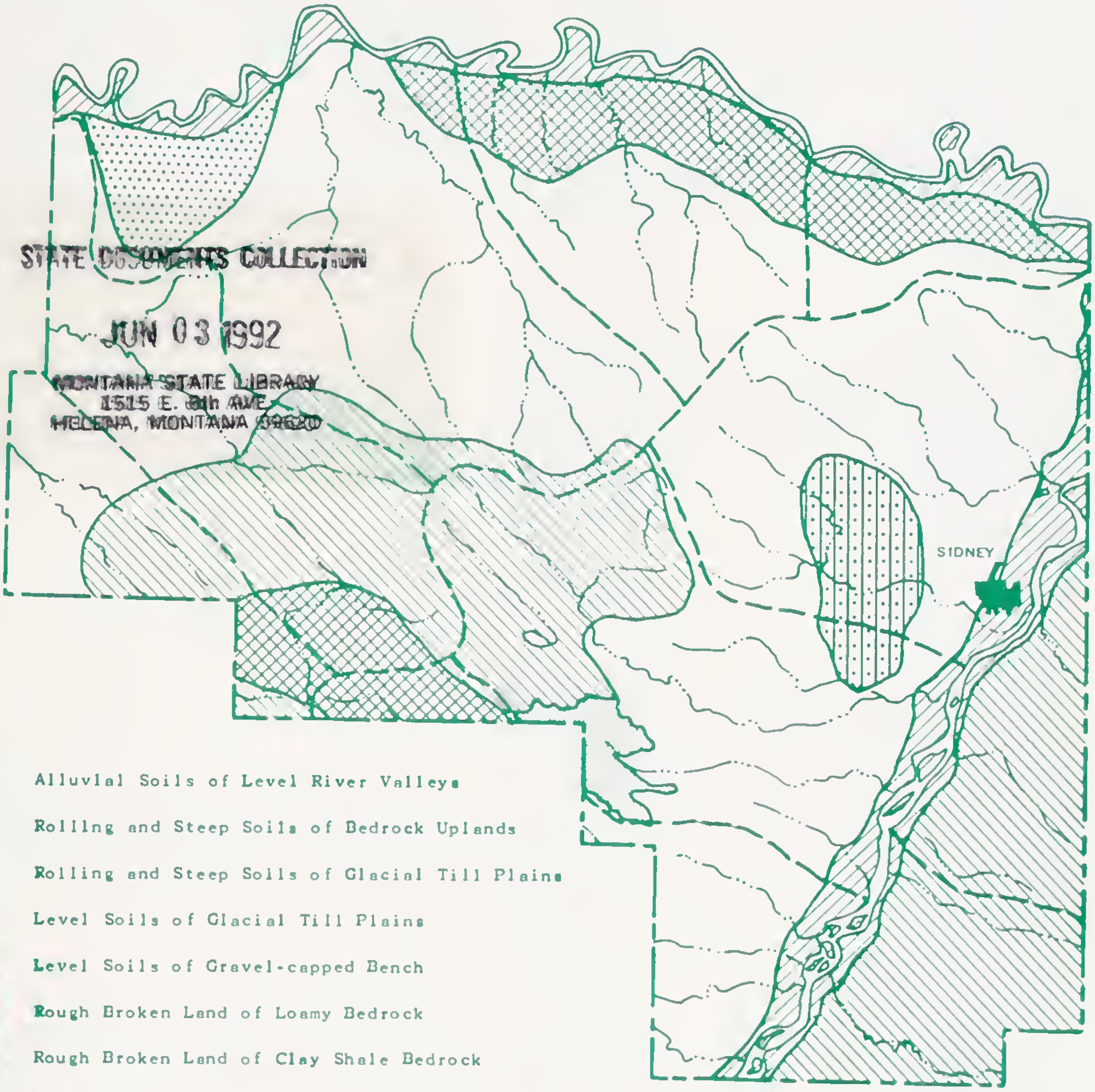
OUR LAND and WATER

IN RICHLAND COUNTY, MONTANA



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▨ Alluvial Soils of Level River Valleys

▧ Rolling and Steep Soils of Bedrock Uplands

☐ Rolling and Steep Soils of Glacial Till Plains

▥ Level Soils of Glacial Till Plains

░ Level Soils of Gravel-capped Bench

▩ Rough Broken Land of Loamy Bedrock

▦ Rough Broken Land of Clay Shale Bedrock

— — Watershed Boundaries

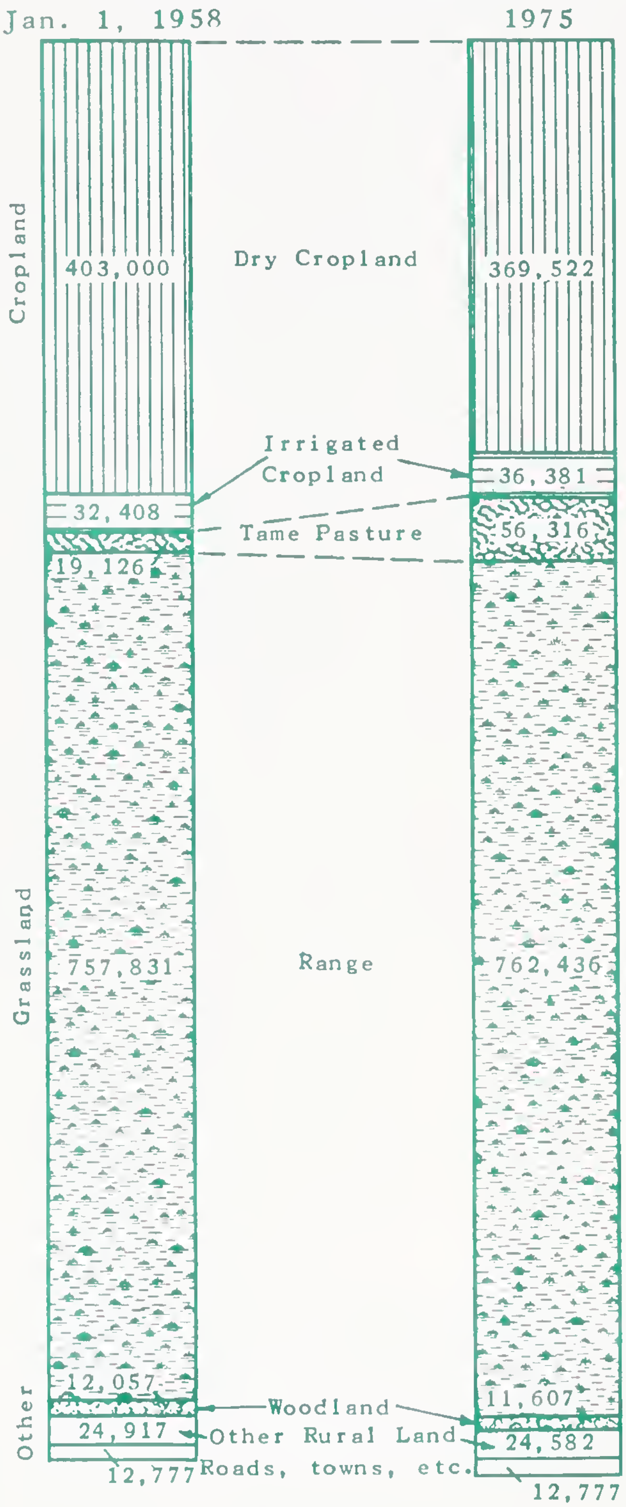
Richland Co., Montana

Contributions from the following businesses and organizations have made this publication possible -- The Sidney National Bank, Richland National Bank, Fairview Bank, Richland County Soil and Water Conservation District, Gem City Motor Company, Larson Motor Company, Sidney Livestock Market Center, Valley Hardware Co., Collins Mercantile Co., Tractor & Equipment.

PLEASE RETURN

In Richland County there are - - - - - - - - -	1,321,600 acres
The area of Federal land is - - - - - - - - -	53,504 acres
Towns, roads, water, etc. amount to - - - -	16,639 acres
This leaves a conservation responsibility on	1,251,457 acres

LAND USE TODAY AND EXPECTED BY 1975



Dry cropland will decrease by about one-twelfth. Marginal cropland will be reseeded to range and pasture. New irrigation will develop on dry cropland.

There will be more irrigated land used for annual crops. The poorer areas will be used for permanent pasture. Additional areas are being brought under irrigation for hay production and for cash crops. Most expansion of irrigated land will occur along the Missouri River.

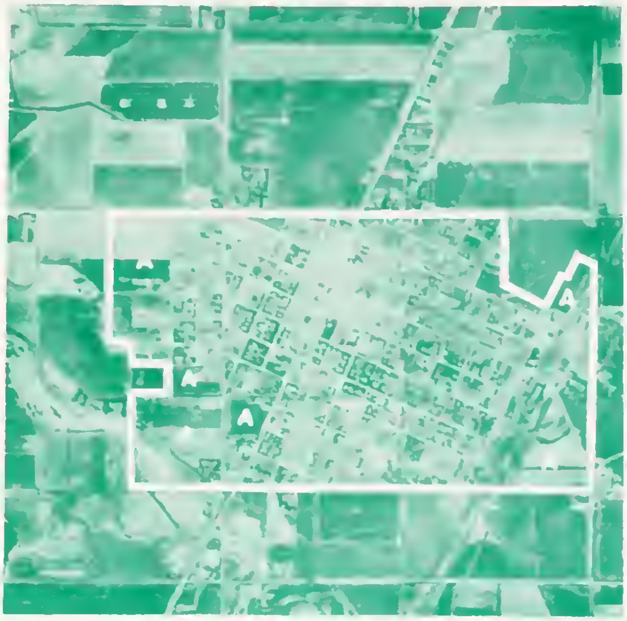
An increase of 200 percent in tame pasture acres will come from dry cropland acres. This cropland is mostly Class IV and VI land.

Rangeland will increase slightly. Some marginal dry cropland will be reseeded to rangeland.

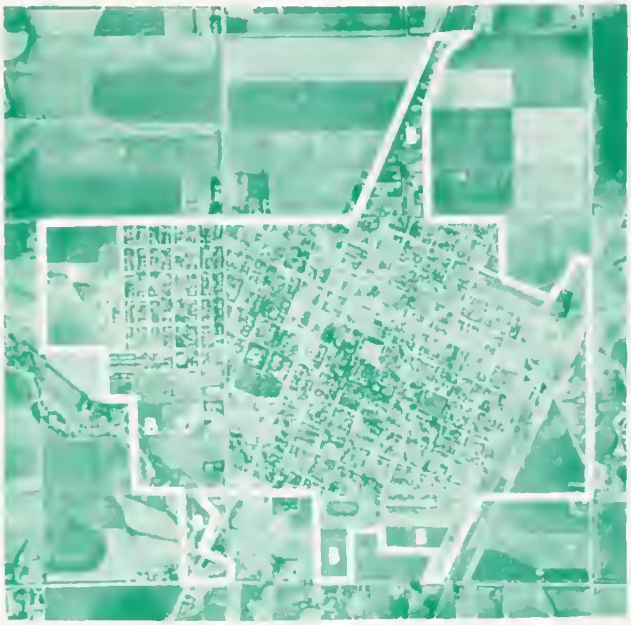
No economic use is predicted for woodland in the county. Most woodland areas are used for livestock grazing.

Nonagricultural use of rural land will remain approximately the same. New roads and widening of roads will be offset by abandoning of farmsteads and county roads.

TREND IN LAND USE



1938 Aerial Photo of Sidney showing expansion "A" to 1950.



1956 Aerial Photo of Sidney showing expansion "B" to 1961.

EXPLANATION: Population is increasing. This increase requires more land for homes, schools, shopping centers recreational areas and roads for transportation. These changes in land use often take place on the best farm land. Note the expansion from 1938 to 1961 of land included in the city of Sidney in the above photos. The "A" areas show about 189 acres in the left photo and the "B" areas show about 148 acres increase in the right photo. This does not include the suburban developments outside the city limits.

WATERSHED INVENTORY

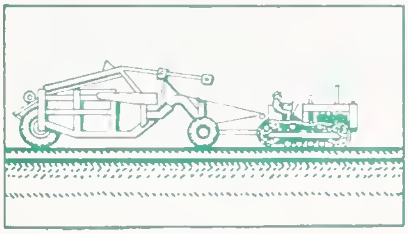
WHAT WAS DONE: Disregarding county or other political divisions, the natural drainages were divided into units of 250,000 acres or less. Richland County was divided into 10 watershed areas. Each division was studied by the committee to determine treatment needs and possible developments which might be met through the small watershed program or by other kinds of local group action.

WHAT IT REVEALED: Possibilities of flood damage from run-off waters in Richland County are virtually nonexistent. Severe flood damage can occur through ice jams formed on the Yellowstone and Missouri Rivers when the ice goes out in the spring.

Lower watershed areas along the Missouri River offer excellent potential for irrigation development. Various surveys determined approximately 18,000 acres could be irrigated along the Missouri River. However, much of this land will not be developed in the next 10 to 15 years. The small watershed program could be used to develop these areas. The Bureau of Reclamation likewise could provide assistance in development of these areas. For the present it is estimated that approximately 5000 acres will be developed in the next 10 to 15 years through small groups or individual action.

Irrigation development along the Yellowstone River is nearly complete. Some development will occur through individual pumping sites along the Yellowstone River or relift pumps from the present Lower Yellowstone Project Canals.

PROBLEMS AND NEEDED TREATMENT


Land leveling

WHICH SHALL IT BE ?
MORE ACRES TO THE BITE OR
-- MORE BITES TO THE ACRE ?

WOODLAND PROTECTION

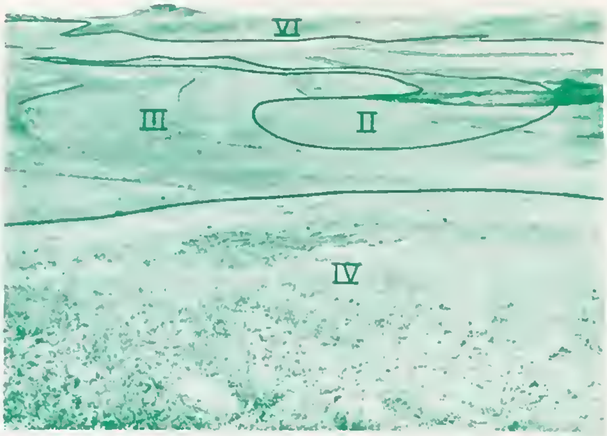
DRY CROPLAND	369,522 acres
36% or 134,614 acres of dry cropland are adequately treated.	
64% needs treatment--	
a. Erosion is the dominant problem on (Strip cropping, stubble mulch, grassed waterways, etc.)	316,869 acres
b. Unfavorable soil is dominant problem on (Crop rotation, fertilizer, narrow strips)	52,653 acres
IRRIGATED CROPLAND	36,381 acres
63% or 22,802 acres are adequately treated	
37% needs treatment--	
a. Erosion is dominant problem	613 acres
b. Excess water is dominant problem	3,427 acres
c. Unfavorable soil is dominant problem	17,054 acres
d. Climate conditions dominant problem	0 acres
GRASSLAND (Range, pasture, irrigated native)	820,652 acres
48% or 393,932 acres are adequately treated	
52% needs treatment--	
a. Needs reseeding	37,643 acres
b. Improvement (deferred grazing primarily)	109,145 acres
c. Overgrazed (proper stocking, and better distribution)	279,933 acres
d. Needs stockwater development	156,000 acres
e. Protection from fire	300,000 acres
f. Severe erosion problem	71,500 acres
g. Rodent control	150 acres
h. Encroachment of plants	2,100 acres
i. Excess water	0 acres
j. Needs water conservation	10,100 acres
k. Insect and disease control	49,384 acres
WOODLAND	11,607 acres
a. Needs establishment (planting)	0 acres
b. Needs stand improvement	0 acres
c. Protection from fire	11,607 acres
d. Insect and disease control	11,607 acres
e. Protection from animals	1,000 acres
f. Erosion control	0 acres
g. Establishment of windbreaks (60 miles)	480 acres

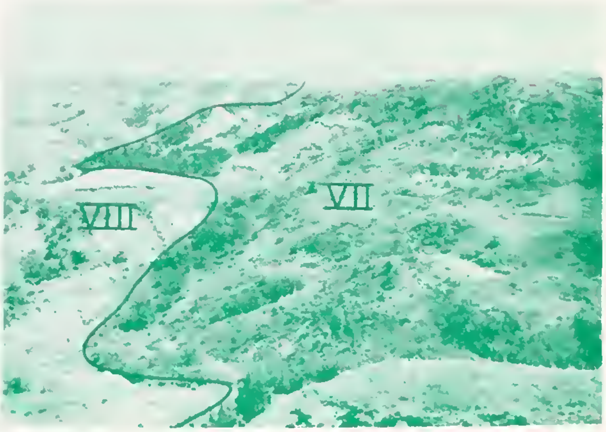
LAND USE CHANGE BY CAPABILITIES

LAND CAPABILITY CLASS	LAND USE 1958	LAND USE CHANGE BY 1975						
		CROPLAND		GRASSLAND				
	Irrigated Cropland	Irrigated	Dry	Pasture	Range	Woodland	OTHER	OUT OF AGRICULTURAL USE
I	15,197	14,887						310
II	6,560	6,630						*
III	7,881	7,896					25	100 *
IV	2,453	2,393		75			15	*
V	42	42						
VI	253	253						
VII	22			22				
	Dry Cropland							
II	114,815		114,715					100
III	187,775	2,475	178,658	6,632			25	25 *
IV	54,288		41,361	12,947				*
VI	46,122		27,778	13,474	5,000			*
	Tame Pasture							
III	1,940		110	1,830				
VI	1,130			1,130				
VII	16,056			16,056				
	Range **							**Includes Irrigated Native
I	3,274	400			2,874			
II	19,498	300	4,600		14,598			
III	123,391	1,055	2,100	2,200	118,442		10	10 *
IV	41,611		50		42,392		80	*
V	5,224			100	5,124			
VI	464,201			1,600	468,760			*
VII	100,913				104,987			*
VIII	1,719				1,719			
	Woodland							
II	3,244	50	50			3,144		
III	652					652		
IV	368					368		
VI	7,793			250	100	7,443		
	Other							
I	1,843						1,843	
II	7,515		100				7,415	
III	10,326				140		10,186	
IV	2,080						2,080	
V	256						256	
VI	2,810				200		2,560	50
VIII	205						205	
TOTAL	1,251,457	36,381	369,522	56,316	764,336	11,607	24,700	595

EXPLANATION: There is going to be a trend to irrigated cropland and irrigated pasture. Quite a lot of the poorer dry cropland is going to be seeded to tame pasture or native range. Some of the better rangeland will be plowed for use as dry cropland or seeded to tame pasture. Acres of tame pastures will increase significantly. Not much change will occur in acres of nonagricultural use.

* 12,000 acres BLM Land into inventory.





LAND CAPABILITY DEFINITION

SUITABLE FOR CULTIVATION				NOT SUITABLE FOR CULTIVATION			
CLASS I	CLASS II	CLASS III	CLASS IV	CLASS V*	CLASS VI*	CLASS VII	CLASS VIII
Very Good Land No Limitations	Good Land Minor Limitations	Moderately Good Land with Major Limitations	Fairly Good Land Occasional Cultivation with Severe Limitations	Suitable for Pasture, Range and Woodland			Suitable for Wildlife and Watershed
				With no Limitations	With Minor Limitations	With Major Limitations	
Increasing Permanent Limitations »»——→							

* Some soils in Classes V and VI can be used for crops with unusually intensive management

WHY THE INVENTORY - Although we are blessed with abundance our resources are not inexhaustible. They must be cared for and used wisely that their productiveness will continue. To assure their wise use we need basic facts about physical problems of conservation, their magnitude, and relative urgency. This inventory contains basic facts. It will be modified and kept current with advances in technology and increased knowledge.

HOW IT WAS MADE - The inventory was initiated in 1957 as part of a national inventory authorized by the Secretary of Agriculture. It is based upon soil surveys of 160 acre samples drawn at random. The soil survey samples were expanded to represent actual conditions in the County. The County Committee used this information along with their knowledge of the County to develop estimates of expected changes by 1975.

WHO DID IT - The inventory and this leaflet were prepared by the Richland County Conservation Needs Committee. The committee consisted of representatives of the County Extension Service, Agricultural Stabilization and Conservation Service, Farmers Home Administration, U. S. Forest Service, State Forester's Office, Agriculture Research Service, Bureau of Land Management, Federal Crop Insurance, Montana Fish and Game Department, Soil Conservation District, Lower Yellowstone Irrigation Project, Sidney Water Users Association, County Commissioners, Chamber of Commerce, Local Bankers, and the Soil Conservation Service, which acted as chairman.

Sidney Herald
Sidney Montana

SUPPLEMENT TO THE RICHLAND COUNTY
CONSERVATION NEEDS INVENTORY

The following is an estimate made by the committee of the practices and amounts of each needed to provide the treatment needed on the various land uses. The practices are listed for the Richland County Soil and Water Conservation District. Estimates were made as of June 30, 1962.

	Code Number	Reporting Unit	Total Units now applied Richland Co.	Add'l. Units needed for Richland Co.	Total Units for Richland Co.
		Land Use - Dry Cropland			
Conservation Crop. System	328	Acres	86,672	241,328	328,000
Contour Farming	330	Acres	20,369	134,018	154,387
Crop Residue Use	344	Acres	2,078	17,000	19,078
Diversion Ditch & Dike	362	Feet	120,085	1,004,915	1,125,000
Diversion Dam	348	No.	21	63	84
Drainage Field Ditch	590	Feet	0	11,500	11,500
Grade Stabilization Structure	410	No.	21	115	136
Grassed Waterways	412	Acres	579	4,881	5,460
Stripcropping Contour	585	Acres	12,003	133,618	145,621
Stripcropping Field	586	Acres	4,708	6,800	11,508
Stripcropping Wind	591	Acres	73,762	4,100	77,862
Stubble Mulch	588	Acres	278,158	30,764	308,922
Critical Area Planting	342	Acres	0	400	400
Land Smoothing	466	Acres	0	2,300	2,300
Streambank Protection	580	Feet	0	2,640	2,640

Land Use - Irrigated Cropland

Irrigation Canals & Laterals	320	Feet	1,756,128	182,160	1,938,288
Conservation Crop. System	328	Acres	11,041	26,152	37,193
Ditchbank Seeding	360	Feet	0	325,386	325,386
Irrig. Ditch & Canal Lining	358	Feet	0	52,800	52,800
Drainage Field Ditch	590	Feet	541,958	2,270,856	2,812,814
Drainage Main or Lateral	480	Feet	670,560	143,226	813,786
Irrigation Field Ditch	388	Feet	244,365	1,668,144	1,921,509
Irrigation Land Leveling	464	Acres	9,830	19,924	29,754
Irrigation Storage Reservoir	436	No.	66	6	72
Irrigation System Sprinkler	443	No.	6	6	12
Irrig. System Surface & Subsurface	445	No.	61	22	83
Irrig. Water Management	449	Acres	929	36,264	37,193
Land Clearing	460	Acres	1,503	560	2,063
Pumping Plant for Water Control	533	No.	33	28	61
Spoilbank Spreading	572	Feet	16,150	155,000	171,150
Structures for Water Control	587	No.	629	2,386	3,015
Streambank Protection	580	Feet	0	13,200	13,200
Tile Drains	606	Feet	6,864	34,000	40,864
Tile System Structure	608	No.	5	34	39
Crop Residue Use	344	Acres	18,708	18,485	37,193

Land Use - Dry Pasture & Hayland

Hayland Planting	420	Acres	612	1,680	2,292
Pasture Planting	512	Acres	30,815	6,720	37,535
Proper Use	526	Acres	30,192	7,343	37,535

Land Use - Irrigated Pasture & Hayland

Hayland Planting	420	Acres	153	560	713
Pasture Planting	512	Acres	4,535	2,240	6,775
Pasture Proper Use	526	Acres	3,820	2,955	6,775
Rotation Grazing	558	Acres	4,995	1,500	6,495
Waterspreading	640	Acres	2,783	1,890	4,673

Land Use - Range

Brush and Weed Control	314	Acres	0	10,000	10,000
Dams Multiple Purpose	349	No.	27	11	38
Farm Pond	378	No.	980	260	1,240
Firebreaks	394	Feet	120,795	1,187,155	1,307,950
Critical Area Planting	342	Acres	0	50	50
Pond Sealing (Bentonite, etc.)	521	No.	6	56	62
Range Deferred Grazing	352	Acres	78,430	109,145	187,575
Range Proper Use	528	Acres	497,427	296,266	793,693
Range Rotation Deferred Grazing	556	Acres	5,142	250,000	255,142
Range Seeding on Converted Land	549	Acres	38,490	16,800	55,290
Range Seeding	550	Acres	458	37,185	37,643
Spring Development	574	No.	90	46	136

Land Use - Range (Cont'd.)

ughs or Tan's	614	No.	2	254	256
terspreading	640	Acres	309	210	519
uctures for Water Control	587	No.	125	315	430
[illegible]	642	No.	415	182	597

Land Use - Wildlife

ond Stocking	398	No.	65	54	119
ldlife Habitat Development	645	Acres	381	458	839
Wildlife Habitat Preservation	643	Acres	405	5,000	5,405

Land Use - Woodland

rmstead & Feedlot Windbreak	380	Acres	309	590	899
ield Windbreak	392	Acres	41	533	574

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